Eco-Friendly

Loose Fill Blown-in Cellulose Insulation

WEATHERSHIELD

CELLULOSE INSULATION | ISOLANT CELLULOSIQUE

Installation Manual

Weathershield Cellulose Insulation

Weathershield is a loose-fill blown-in type 1 cellulose insulation for ease of installation in attics, walls, ceilings and floors.

Its not only a natural choice for the environmentally-conscious consumer but one that outperforms both thermally and acoustically. With a superior R-value of 3.8 per inch, Weathershield's excellent coverage, perfect fit and greater density is a sound alternative to other fibrous insulations.

Weathershield insulation delivers long-term fire retardant protection and unlike other insulation products, will not melt or propagate fire. Safe and easy to install, it does not itch or contain any formaldehyde or harmful emissions. It is specially treated to repel insects and rodents and will not promote the growth of harmful mold and fungi.

With over 87% recycled content, and many performance benefits, Weathershield is a natural choice for all your insulation needs. Start saving today, save on product cost and get immediate rewards in energy savings.

Contact us today for more iinformation.

Weathershield is available in Ontario, Quebec and Atlantic Canada

Attic Requirements

R-20 (RSI 3.5) 1 bag per 36 ft^2 (3.3m^2)
R-32 (RSI 5.6) 1 bag per 22 ft^2 (2.1m^2)
R-40 (RSI 7.0) 1 bag per 18ft^2 (1.7m^2)
R-60 (RSI 10.6) 1 bag per 12ft^2 (1.1m^2)

Please carefully read manufacturer's instructions and precautions prior to application in order to ensure proper installation.

Weathershield is manufactured in accordance with CAN/ULC-S703-09 "Standard for Cellulose Fibre insulation for Buildings" and has been evaluated by Canadian Construction Materials Centre (CCMC #08251-L).

Weathershield is manufactured under a certified quality management system. If you consider all of the environmental advantages of Weathershield and combine this with its performance, safety and cost effectiveness, cellulose is the right choice ... naturally.

Weathershield provides seamless coverage

Superior thermal and acoustical properties - comfort

Easy & Safe to install

Increased Fire Resistance

Environmentally Preferred - 87% Recycled Content

www.thermocell.com

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WEATHERSHIELD LOOSE FILL INSULATION APPLICATION MANUAL

FOR ATTICS, WALLS, FLAT OR SLOPED ROOFS

ADVANTAGES AND BENEFITS:

- High Stable R-Value
- Controls air Leakage and Convection
- Reduces Conduction
- Prevents Formation of Condensation Moisture
- Cooler Summers
- Seamless Blanket Cover
- High Density To Resist Air Movement
- Sound Deadening Ability
- Lasts The Lifetime of the Building

Manufactured By:

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Weathershield is manufactured in Canada and is available coast to coast

Introduction

This manual is a general installation guide for Weathershield loose fill insulation in attics, flat or sloped roofs, walls and floors.

Product Performance Specifications

Weathershield is manufactured in accordance with Underwriter Laboratories of Canada (ULC) Standard CAN/ULC-S703-09. This standard contains several very demanding product performance requirements - an abbreviated standard is included as an annex to this publication.

To ensure Weathershield is manufactured to these high standards, Weathershield is evaluated and listed with the Canadian Construction Material Centre (CCMC). Also, Weathershield is manufactured under an ISO 9001:2008 certified quality management system.

Weathershield's Features

- High R-Value - as much as 35 percent better than conventional insulation.
- Perfect fit — Requires no cutting or splitting.
  Reduces heat losses due to air leaks around wires, pipes and fixtures.
  No air leaks as commonly found with improperly fitting batts and at batt seams.
- High density — As much as three times as dense as conventional insulation.
  Reduces heat losses caused by air infiltrating directly through the insulation.
- Treated with borates to resist fire, pests, mould, mildew, rot and corrosion.
- Made with at least 85% recycled paper fibre.

Weathershield is an effective and economical insulation system designed to cut the rising costs for heating and cooling. Remember, optimum product performance is obtained when the installation is done correctly.

The following procedures are only recommendations by the manufacturer. In the event these recommendations appear inadequate, the applicator should consult the manufacturer for further information and advice.

Factors Effecting Heat Loss

To help provide the general public with a means by which insulation performance can be measured and compared, R-Value (Resistance-Value) was established. R-Value is derived from thermal conductivity measurements which is a measure of the amount of heat energy which flows through a material over a given period of time. Thermal conductivity measurement are made under non-extreme laboratory conditions and does not describe the overall resistance of the material to heat loss.

Overall heat losses not only occur by conduction but by convection and infiltration. When all these factors are taken into consideration a true picture of the insulation's performance can be made and is commonly referred to as P-Value.

Weathershield insulation offers a solution to this problem. It has been used successfully for many years in schools, restaurants, hotels, swimming pools, arenas, warehouses and all types of farm and commercial buildings. It is a short, fibrous and dense material which conforms to irregularities such as electrical boxes, wiring and plumbing pipes, thus providing a seamless blanket of insulation. Conversely, batt insulation leaves gaps and voids at butts, along studding and joists, next to sheathing and around any fixture such as electrical boxes or pipes. According to independent studies these air leakage factors can cause the effective R-Value to be reduced by up to 50%. Furthermore, such air movement into the wall and ceiling membrane carries water vapour which can result in condensation problems. A comprehensive test for P-Value concerns the four areas of performance discussed below. If an insulation performs well in each of these areas, it will perform well in a structure, resulting in low heating costs.

Infiltration: This is the movement of warm or cold air from one area to another such as through walls, around windows and doors, heat vents, plate lines, corners and any other area where air can move through. Air infiltration can occur by passing directly through the insulation, by passing through defects in construction such as gaps, cracks or voids. For good performance, it is essential to control air flow. For many years vapour barriers were used in an attempt to control air flow. Even today this method is still being used because of the very basic misconception that a vapour barrier is adequate to stop infiltration. It is now known that vapour barriers do not stop infiltration, nor do exterior type barriers such as rigid foam sheathing. Air leakage is best controlled by the insulation itself. If the insulation component leaks air, infiltration and convection will result. Even if an infiltration barrier results in a tight house it will not necessarily be a warm house. Let us illustrate that by the example of a new house with no insulation. Having determined that infiltration was a major heat loser, let's wrap the entire house with a poly barrier.
Would this house then be warm and comfortable? The answer to this question is no, as will be revealed below under "convection". Let's consider the same house with the vapour barrier and a loosely bound insulation fibre of full thickness in the wall and attic.

Would this house be warm and comfortable?

Answer: It would be better than the empty cavities, but even though the infiltration is cut out, convection still exists. If we wanted this house to be very comfortable, we would use an insulation product that does not allow free air flow. This would stop the infiltration and convection problem and create a very comfortable house. Urethane and other foam type sub-sidings which are vapour barriers themselves, should never be put on the outside of exterior walls. Exterior wall membranes should be able to breathe so that any moisture which accumulates may dissipate by diffusion to the atmosphere. Although vapour barriers are a separate subject, we are mentioning this so that you will understand that the very best method for restricting air flow is to fill the wall and attic with a material that resists infiltration, and not rely completely on poly or sidings for control.

Convection: Convection is the circulation of air within a space. Air when heated, rises, and when cooled, falls. In a wall, natural forces of gravity along with warmer inner surfaces and colder outer surfaces create a continuous movement of air which in turn facilitates the transfer of heat energy.

Conduction: is the transmission of energy moving through a substance. If a building material is conductive such as the glass used in windows heat loss will occur directly across the material. Similarly building materials with low thermal properties accelerates convective heat losses because the material facilitates a differential temperature gradient between the warm and cold environments.

R-Value: This is the resistance of heat or the measure of heat lost through a material. This test is done in a laboratory using a 5.5" thick sample, at a mean temperature of 75° F (24°C) with a temperature difference across the sample of 72° F (22°C). R-Value then is testing heat flow through insulation or other materials. Air flow is not part of the test.

Performance Value: Performance of insulation cannot be evaluated before each of the above factors are evaluated individually. To determine the performance of an insulation, one must evaluate its ability to control infiltration, convection and conduction. To sell high performing products, the customer will need to understand the difference between high performing products and R-Value alone. Contractors and builders especially need to understand these factors. If they are genuinely interested in quality of insulation, they respond to this approach. If they accept the idea of Performance-Value (P-Value), they will be interested in giving you future jobs. The basic reason for this performance is as follows:

a) **Glass fibre batts installed in an exterior wall are dry, but because of air leakage the glass fibre batt and surrounding construction materials are continuously subject to moisture gains through condensation.**

b) **Weathershield remains dry on a continuous basis because of its resistance to air leakage and air convection.**

Planning Considerations

The following items should be given attention prior to installing insulation:

Heat Sources: Maintain building, electrical, gas and oil safety code clearances between the insulation and heat emitting device, such as fuel burning appliances, chimney pipes, ducts and vents to these appliances (at least 2" (50mm)) and recessed light fixtures (at least 3" (75mm)) unless approved for insulation contact. Do not cover recessed light fixtures or other heat emitting devices that are not approved for insulation contact with any type of insulation because the heat which is generated has no means of escape. The resultant heat build-up may be enough to ignite surrounding combustible building materials. The consideration also applies to other heat sources such as fan motors, transformers or especially, incandescent light bulbs such as the one on the end of your trouble light cord. Never cover these items with insulation. Similarly, do not permit insulation to directly contact a chimney or flue. Do not fill up chimney chases.

"NEVER CUT CORNERS WHEN DEALING WITH FIRE HAZARDS".

Maximum Service Temperature: To preserve the integrity and performance of the insulation, constant ambient temperatures should not exceed 90°C (194° F).

Air Ducts: Combustion air intakes for fireplaces and furnaces must not be blocked and insulation should not be installed in a manner which would allow it to be drawn into or cooling system. Particular attention should be paid to any loose connection in duct work located in attic areas.

Exposure to Water: Recurring exposure to conditions such as rain, or running water must be avoided; as this will reduce the thermal resistance of the insulation.

Masonry Wall Cavities: This insulation is not recommended for filling the cavities of masonry walls.

Attic Ventilation/Insulation Stops/Air Chutes: Attic ventilation is an important factor for good insulation performance. It is recommended that 1 ft² (100cm$_2$) of ventilation area be provided for each 300 ft² (3m^2) of ceiling area. It is recommended that 50% of ventilation space be located in the soffit area and the other 50% be on the roof or gable ends. Properly installed stops are also necessary to prevent wind coming through the soffits blowing the insulation back from the eave area. Use air chutes for renovation work because stops are difficult to install once the ceiling is in place. Insulation stops that are positioned between the roof rafters to allow ventilation from soffits are available from our warehouse stock.

Moisture Diffusion: It is important that moisture be able to escape from within a building envelope. Therefore, exterior sheathing material should be of the breathable type or, if not, have small spaces left between sheets. When insulating flat roofs it is important diffusion points be provided around the perimeter.

Dust Masks: It is recommended that the installer wear a dust mask when installing the insulation in confined areas. Although the product is non-toxic, like all nuisance dust it can be irritating to nasal passage membranes.

Bulkhead Openings: Holes in ceilings or sidewalls that would allow the insulation to escape from the area to be insulated should be sealed. In ceilings this could include openings into cabinet bulkheads, bulkheads over bathtubs, and interior walls. In sidewalls, particular attention should be given to electrical box covers and plumbing openings under sinks. Filling these areas would waste insulation and create a mess. Bulkheads often contain recessed lights. Make sure the drywall or sheathing is securely fastened.

Existing Wall Cavity Insulation: Sidewalls should be checked for existing insulation. Weathershield insulation can be easily pumped into empty wall cavities. Although under some conditions additional insulation can be added to the cavity, it is recommended that the existing insulation be removed.

Balloon Framing: When blowing the walls on a two story house, determine if the wall section between stories is open. If this is the case, some form of insulation stop is necessary in order to insulate this area without wasting a lot of insulation in the joist spaces between floors.

Drilling Access Holes: Entry into wall cavities can be obtained by drilling a hole through the interior or exterior wall surface, depending on wall conditions and preference.

Reversed Vapour Barrier: If you intend to add insulation to an attic which contains batt type insulation with an impermeable facing on the top side you must completely break this facing so that a vapour barrier is not formed in the middle of the insulation. Any applications of batts in this position were improperly made in the beginning. (Facing should be on bottom side). Vapour barriers should always be located on the heated side of a wall or ceiling. Also, the outside (cold side) of walls should be able to breathe so that moisture vapour can escape. Many older homes and buildings don't have a vapour barrier on the warm side of walls and ceilings. The major source of moisture is air leakage. For good performance it is essential to control air flow. Air leakage is controlled by the Weathershield itself. Weathershield's short fibres, high density and the seamless blanket cover provides high resistance to air leakage and prevents formation of condensation moisture by preventing moist interior air from penetrating deep enough into the wall or ceiling insulation to reach the dew point temperature. If a vapour barrier is desired, an oil base paint or a vapour barrier paint applied to the drywall will serve this purpose.

Poor Fit With Batts: Glass fibre batt insulation is usually inserted between the ceiling joists from below, and the installer or owner may not be aware of the areas where the batt is compressed or where poor fit around obstructions or trusses leaves voids and gaps on the upper surface. These thin spots and gaps can reduce the effective R-Value by up to 50%, and also cause moisture problems. Weathershield insulation provides a seamless blanket cover that avoids these problems (P-Value).

Attic Hatch: A fence of backer board or plywood should be placed around the attic hatch to prevent the insulation from falling out.

Recommended Equipment

Blowing Machines: A good variety of portable or truck mount, electric or internal combustion powered machines are available:

Low Volume Electric: Agitator hopper (Krendl or equivalent) fitted with a fan type blower (Dumore or Equivalent) and 100' (30m) of 2½" (64mm) hose. This equipment is suitable for DIY attic installation or low volume retrofit wall application. Production rates with this type of equipment is usually around 800 lb/hr (360 kg/hr.).

High Volume Gasoline or Diesel: Large hopper, positive displacement blower (Vanco, Unimatic, Heat Seal or equivalent) with a minimum 100' of 3" (75mm) hose, or smaller if desired. This equipment is recommended for high volume attic application but can also be used for wall installation if air pressure is carefully reduced. Production rates with this type of equipment is usually around 2000 to 2750 lb/hr (900 to 1250 kg/hr.). For wall installations use a 2" (50mm) hose direct from the machine. Best performance on any installation, attic or wall, is achieved using a minimum hose length of 150' (45m).

Accessories:

1. Electric Drill (insulated) 1" (25mm) and/or 2c" (54mm) drill bit.
2. Plugs to fill access holes (plastic vented or paintable, wood or foam).
3. Appropriate finishing materials (mortar, joint filler, caulking, paint).
4. Dust masks, ladder, tape measure, plumb bob, hammer, etc.

Attic Application Procedures - Horizontal Ceiling

Air Adjustment: Set the air adjustment on the blowing machine as per manufacturer's guide. The setting will vary with the amount of hose you are using. The material should flow steadily (as water from a hose) without creating excessive dust.

Insulation Depth: By holding the end of the hose in a horizontal to slightly inclined position and within a few feet of the attic floor, apply the insulation. Install the insulation to the applied thickness which corresponds to the desired R-Value located on the back of the package. Install the insulation as uniformly as possible and ensure the correct number of bags (as determined by the coverage chart on the package) are installed.

Perimeter Application: Inaccessible outer edges of an attic might be reached more easily if a rigid tube extension, such as a lightweight aluminum or plastic pipe is attached to the end of the flexible hose.

Attic Application Procedures - Sloped Ceilings (4.5 in 12 pitch or less)

a) The same procedure for attic application on a horizontal ceiling would apply.

b) **Insulation Stops (Vents):** Make sure the insulation stop will extend inward a minimum of 6" above the top surface of the insulation material to prevent blow back of material during windy conditions (The minimum stop length should be 48" or 1200mm).

c) **Alternative for Perimeter Application:** Install insulation stops and then install glass fibre batts to cover a 4' (1200mm) strip around the perimeter. Then insulate down to the glass fibre batt.

NOTE: For slopes greater than 4.5 in 12, spaces must be enclosed (ventilation provided where possible) and filled under pressure to achieve a finished density of 2.5 lb./ft^3 (40.5 g/m^3).

Flat or Sloped Roof (enclosed cavity) Application

House Trailers: House trailers are the most common example of flat roof construction. As no standard construction practices are employed, it is therefore necessary to check construction parameters before insulating. Ceiling panelling may be rather flimsy so very careful air control is required.

Flat or Sloped Roofs: The actual vertical thickness of ceiling joists determines the maximum possible thickness of insulation.

Most flat roof construction includes some type of bridging between joists for added stability to the roof assembly. Such bridgings may obstruct the application tube, making it impossible to completely fill the joist space from one side of the building, it is then necessary to complete the space from the other side of the building or from inside using a directional nozzle.

For sloped ceilings (cathedral ceilings) greater than 4.5 in 12, spaces must be filled under pressure to achieve a minimum density of 2.5 lb./ft$_3$ (40.5 kg/m$_3$) in order to prevent settlement.

Floors: Enclosed floor cavities may be filled in the same manner as a flat roof.

Hole Locations: Check roof assembly parameters (as mentioned above) and determine how many access holes should be drilled and where. Should there be joist bridging within the roof assembly, both sides of the building must then be marked for access holes. Provided there are no obstructions, at least one hole is needed for each 10' (3m) length of cavity space.

Drilling Access Holes: Since the application tube has a 2" (50mm)O.D., it is recommended that 2c" (54mm) holes be drilled for access. Be sure to use the proper bit for the job.

Before drilling, it must be realized that upon completion of the job, you must repair the surface that has

been drilled. For trailers, aluminum sheathing usually can be removed and then replaced after insulating (i.e. no need to refinish surface). For non-removable surfaces, it is important to realize that it is extremely difficult to match the old surface (especially faded paint, stucco, siding, and other finishes).

Install Insulation: Beginning at one end of the roof assembly, insert application tube through access hole into framing space. Endeavour to maintain a central position. Since you are working from back to front in filling the cavity, insert application tube to near maximum in depth. Begin insulating. Progressively withdraw the hose as each portion of the cavity is insulated. If thru-blower type insulating machine is used there will be an audible increase in RPM of the fan blower motor as the hose blocks or flow stoppage is visible in hose itself. Continue application until cavity has been completely filled.

Repairing Holes: Plug access holes and repair surfaces as required. Plastic vent plugs can be used. Make sure the roof can breathe so that moisture can escape.

Wall Installation Procedures - Retrofit

Removal of Siding: Remove exterior finish material whenever possible before drilling holes as this will eliminate patching.

Fire Blocks: Wall cavities should be checked for fire blocks or other obstructions by inserting an electrician's fish tape or plumb bob through the drilled holes.

Cavity Completely Enclosed: Unless the cavity is completely enclosed, it may not be possible to install Weathershield under sufficient pressure to ensure complete fill and uniform density. Weathershield will not settle if blown into the wall cavity at a minimum density of 3.0 lb/ft$_3$ (48kg/m$_3$).

Air Setting: The air setting for proper cavity fill is critical. Not enough air may result in light density and possible voids. On the other hand too much air (with positive displacement blowers) could bulge or dislodge panelling. Best to start with too little air and adjust upwards to the correct setting.

Quantity Check: Complete fill of the cavity can be double checked by doing a mathematical calculation based on the amount of material installed and the volume of the stud spaces (see coverage chart on the Weathershield package).

Direct Blow (two Hole) Method: This method is accomplished by filling the wall cavity from two points for each eight feet of vertical wall section. Location of the 1" (25mm) or should be approximately two feet up from the bottom and one foot down from the top. Only one hole is necessary above and beneath windows and doors without solid headers. A 1" (25mm) or 2" (50mm) nozzle is available. For quicker installation, use the 2" (50mm) nozzle and 2c" (54mm) hole. A special 2" (50mm) directional nozzle can be used to direct Weathershield upward or downward more easily. You may prefer to use a 2c" (54mm) hole on the bottom for high volume and a 1" (25mm) hole at the top where less material is required. Insert the nozzle into the bottom hole first and blow until the material flow stops.

Next insert the nozzle into the top hole and continue the blow until the material flow stops, thus ensuring the cavity is full. Excess air will find its way out through cracks and openings. To ensure complete fill under electrical plug-in boxes, it is helpful to place the bottom hole slightly below the box level. Older houses

slated for interior refinishing may have the fill holes drilled on the inside. In the event you drill into electrical wires, an electrician's assistance should be obtained to assess and/or repair any damage. It is also advised to use an insulated drill to avoid the possibility of electrical shock.

Injection Method: This method is accomplished by inserting a 1" (25mm) to 1 ½" (38mm) plastic hose through a hole into the wall cavity. Insulation is blown into the cavity to the proper density by withdrawing the hose in one foot stages each time the material stops flowing. To ensure that the hose is inserted into the wall cavity properly, a piece of tape should be wrapped around the hose back from the end at a point equal to the distance from hole to the top of the wall cavity. The end of the hose should be cut at an angle to make passing obstructions easier.

These possibilities include entry from:

a) The outside wall behind or through the siding
b) The bottom plate
c) The inside wall behind the baseboard
d) The inside wall at the drywall tape joint.

When entering the wall cavity from points (a) and (c), the hole should be drilled at an upward angle.

Plugging the holes in the wall can be done with plastic plugs (paintable), wood or foam plugs. Plastic plugs are typically used in areas where the plug will be concealed such as wood-lap, fibreboard, aluminum, vinyl and steel siding. The tapered wood plugs can be used with wood lap, plywood, fibreboard and drywall. Foam plugs are used exclusively as a backer on the interior walls for patching plaster. When using plugs and doing hole repair, be careful not to guarantee colour of hole repair with the existing exterior finish which could be difficult or impossible to blend.

Wall Installation Procedures - New Construction

Application of Weathershield in walls of new construction is currently limited to factory certified applicators or individuals installing under the direct supervision of a certified applicator. Installation instructions and guidelines are covered under the EnviroShield Insulation System. Please contact Thermo-Cell for additional information.

ANNEX A

CAN/ULC-S703-09
Standard for Cellulose Fibre Insulation for Buildings

Underwriter's Laboratories of Canada (ULC) is a private agency which certified by Standards Council of Canada to produce product standards in a wide range of subject areas and have, in cooperation with testing agencies, consumer groups and manufacturers, produced the above product standard for Cellulose Fibre insulation. The current document supersedes CGSB 51.60 and came into effect in June 2000. CAN/ULC-S703-09 requires that Weathershield meet or exceed the following test criteria:

Surface Burning Characteristics: Flame spread clarification shall not exceed 25 when tested in accordance with CAN/ULC-S102M or 150 when tested in accordance with CAN/ULC-S102.2M.

Open Flammability: The critical radiant flux shall be greater or equal to 0.12 W/cm^2.

Thermal Resistance: Thermal resistivity shall not be less than an R 3.3 (RSI of 18.5) nor less than the values shown on the bag.

Density: Density shall be within plus/minus 10% of value used to establish coverage shown on bag).

Flame Spread Permanency: The critical radiant flux shall be greater or equal to 0.12 W/cm^2. after the aging process.

Moisture Vapour Sorption: Moisture gain after exposure to high humidity shall be no more than 20% higher than the value determined before exposure.

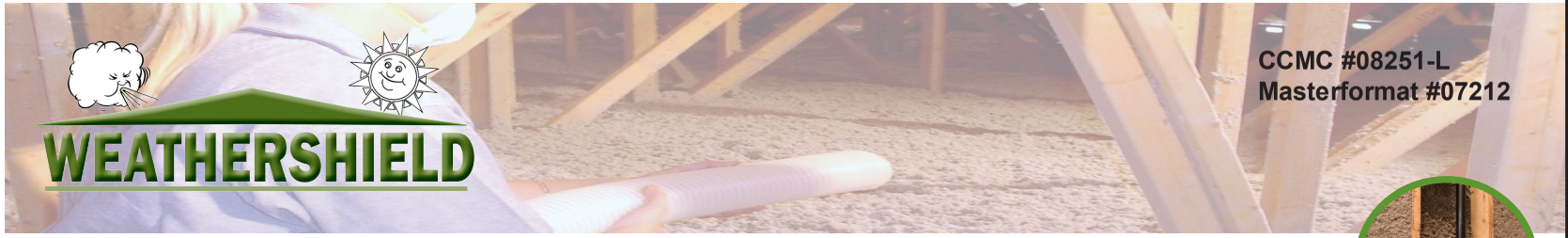
Corrosiveness: Aluminum, copper, steel and galvanized steel samples shall not show pitting and/or weight loss as stipulated in the Standard after 28 days exposure.

Fungi Resistance: Test specimen shall exhibit no more growth than the comparative item.

Separation of Chemicals: Separation during prescribed test shall not exceed 1.5% by mass of the sample.

Smoulder Resistance: Specimens shall not exhibit any flaming combustion and shall not exhibit a mass loss greater than 15%.

NOTE: Actual test procedures for the above performance criteria are very detailed, and are available from Thermo-Cell upon request.



CCMC #08251-L
Masterformat #07212

Coverage Chart / Charte de recouvrement - Attics / Entretoit

CELLULOSE FIBRE INSULATION TYPE 1 L'ISOLATION EN FIBRE CELLULOSIQUE

ATTICS / ENTRETOIT											
Thermal Resistance Résistance Thermique		Applied Thickness Épaisseur Appliquée		Settled Thickness Épaisseur Tassée		Mass per Unit Area Masse par Unité de Surface		Coverage per Bag Recouvrement par Sac		# Bags Required Quantité de Sacs Requis	
RSI Value	R Value	mm	in (po)	mm	in(po)	kg/m^2	lb/ft^2 (lbs/pi^2)	m^2	ft^2 (pi^2)	100 m^2	1000 ft^2 (pi^2)
2.1	12	90	3.5	80	3.2	2.06	0.42	5.5	59.4	18.1	16.8
3.5	20	150	5.9	134	5.3	3.43	0.70	3.3	35.6	30.2	28.1
4.9	28	210	8.3	187	7.4	4.80	0.98	2.4	25.4	42.3	39.3
5.6	32	240	9.4	214	8.4	5.48	1.12	2.1	22.3	48.3	44.9
6.2	35	262	10.3	234	9.2	6.00	1.23	1.9	20.4	52.9	49.1
6.3	36	270	10.6	241	9.5	6.17	1.26	1.8	19.8	54.4	50.5
7.0	40	299	11.8	267	10.5	6.85	1.40	1.7	17.8	60.4	56.1
8.8	50	374	14.7	334	13.2	8.57	1.75	1.3	14.3	75.5	70.2
9.7	55	412	16.2	368	14.5	9.42	1.93	1.2	13.0	83.1	77.2
10.6	60	449	17.7	401	15.8	10.28	2.11	1.1	11.9	90.6	84.2

R-VALUE 3.8/in (RSI 0.0263/mm) DESIGN DENSITY 1.6 lbs/ft^3 (25.6 kg/m^3)
These charts represent average machine applied coverages which may be affected according to equipment and applicators' techniques.
From R-40 or RSI-7.0, it may be necessary to bring a correction according to the application technique.

COEFFICIENT R 3.8/po (RSI 0.0263/mm) MASSE VOLUMIQUE THÉORIQUE 1.6 lbs/pi^3 (25.6 kg/m^3)
Ces tableaux représentent des moyennes lorsque appliquées à la machine, la couverture varie selon l'équipement et les techniques de l'applicateur.
À partir de R-40 ou de RSI-7,0, il peut être nécessaire d'apporter une correction selon la technique d'application.

Weathershield is manufactured under a certified quality management system. If you consider all of the environmental advantages of Weathershield insulation and combine this with its performance, safety and cost effectiveness, cellulose is the right choice ... naturally.

www.thermocell.com

- Manufacturer's Warranty -

Thermo-Cell Industries Limited warrants that Weathershield Insulation is manufactured to meets or exceed CAN/ULC-S703-09 (formerly CGSB 51.60-M90).

Weathershield Insulation is guaranteed in accordance with the installation record for the normal life of the building, provided the material is installed according to manufacturers instructions. The liability of Thermo-Cell will be limited to the replacement of defective insulation or installation of additional insulation provided a copy of the product's attic completed card and proof of purchase is supplied to Thermo-Cell.

In no event shall Thermo-Cell be responsible or liable for any damages arising from the improper installation or use of defective material whether such damages be direct, indirect, consequential or otherwise. This warranty excludes all damages to the insulation resulting from defects or deterioration in the structure, physical or mechanical abuse and/or acts of nature.

THERMO CELL INDUSTRIES LTD.

Thermo-Cell Industries Limited is a leading Canadian manufacturer of thermal and acoustical insulation, specialty fibres and hydroseeding mulch. Thermo-Cell's products are actively marketed under the **Weathershield**, **Pro-Cell** and **Celumulch** trademarks.

For more information on:

WEATHERSHIELD
CELLULOSE INSULATION ISOLANT CELLULOSIQUE

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